

CURRIER (A. F.)
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THE

DISORDERS OF MENSTRUATION.

BY

ANDREW F. CURRIER, M.D.,

OF NEW YORK.



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IT is a peculiarity of the functions of the body that, when performed normally, they are performed painlessly and without the knowledge and consciousness of the individual. When an individual becomes aware that this or that function is being performed—that is, when his attention is attracted with an intensity which he cannot dismiss, his emotions being involved to any degree between simple discomfort and the most diabolical pain—there is no question that one of the functions is deranged, disturbed, disordered.

I do not know whether the argument has ever been made that, since it was once said to woman, "I will greatly multiply thy sorrow and thy conception, in sorrow thou shalt bring forth children," therefore it follows that menstruation should be included in the primal curse. Certainly "parturition hath few pleasures," but it cannot be argued from that fact that menstruation should abound in pain.

It has been asserted by various authorities, more

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as a matter of personal belief and opinion than as a fact founded upon anatomical or physiological conditions, that menstruation is, or always should be, attended with more or less pain ; but, with all deference to such authority, that is not my belief—indeed, if it is normally accomplished, it should be as painless as digestion, or secretion, or assimilation. In this opinion I am in accord with Meadows, who made an elaborate discussion of this question in the Harveian Lectures for 1881 (see *Med. Press and Circular*, xxxii. 487).

Menstruation, in its simplest meaning, signifies a discharge of blood, epithelium, and glandular secretions from the uterus, mingled with more or less of the secretions of the vagina and vulva, recurring each lunar month, continuing from three to six days, due to a stimulus which has not yet been absolutely determined, which produces congestion of the entire genital apparatus, and attended by both direct and reflex phenomena which seem to depend mainly upon the congestion. From this definition as a basis, all the irregularities of menstruation may be wrought out.

There have been much patient work and ingenious speculation in regard to the process which actually occurs with menstruation. The subject was deemed of so much importance that a special discussion of it occupied a portion of the attention of the International Medical Congress held at Paris, in 1867, many valuable papers being read and discussed.

Physiologists and clinicians have alike failed to

settle conclusively whether the entire mucous membrane is shed with each recurring menstrual epoch, or only certain epithelial layers (Leopold, John Williams, Möricker, Wyder, and others); whether the menstrual discharge means an aborted decidua (Pouchet, Ercolani, Tarnier, Putnam-Jacobi); what may be the influence and bearing of the Fallopian tubes in the matter (Harley, Tait), and many other important questions, into the merits of which it is not intended to go at this time. Beigel's theory concerning menstruation is that it is due to an impulse in the genital sphere, an expression of which is sexual excitation, just as there is a regular expression of need for rest, food, etc. Hyperæmia follows, especially in the pelvic organs, and menstruation is the result.

Such a theory is too abstract and vague, and demonstrates nothing. A more reasonable theory is that of Pflüger, which makes menstruation dependent upon the maturation of the ova. As the Graafian follicle swells, vasomotor nervous influences are excited, which become diffused through the vascular system and cause congestion. The congestion involves the ovarian circulation, and contributes to the bursting of the Graafian follicle, the liberation of the ovum, and the consequent hemorrhage. This theory is also unsatisfactory, for it requires that ovulation should be attended by external hemorrhage, and it is not impossible that one may occasionally be entirely distinct from the other. Upon this point Dalton ("Report on the Corpus Luteum,"

Trans. Amer. Gyn. Society, ii. p. 111) remarks: "If we regard the rupture of an ovarian follicle and hemorrhage from the uterus in menstruation as two phenomena normally coincident, excited by a common cause, and both subservient to the same general function, we must still recognize the possibility of either one being deranged independently of the other" (p. 137).

Pouchet, who devoted a considerable portion of his life to the investigation of the subject of menstruation, leaving a magnificent memorial of his work in his *Théorie positive de l'ovulation spontané*, was the first one, so far as I can ascertain, to recognize (1847) the analogy between the mucous membrane which is shed from the uterus of all unimpregnated women, to a greater or less extent, each month —the *decidua menstrualis*, and the decidua which forms an enveloping membrane to the foetus. Or, perhaps, it is more correct to say that he recognized that a decidua is formed each month, which is cast off if impregnation does not occur. His theory of menstruation, like Pflüger's, is that it is dependent upon ovulation, and that the commotion aroused by the maturation of ovules not only excites the genital apparatus, but reacts upon the whole individual (*op. cit.*, p. 201).

Goodman opposes the ovular theory (*Trans. Amer. Gyn. Society*, ii. p. 650) on the ground that menstruation is presided over by a law of monthly periodicity, which is the resultant and exponent of recurring physiological acts. This law is manifested

only in the economy of the female, and in connection with the function of menstruation. He believes that the process by which the monthly cycles are accomplished is seated in the ganglionic nervous system.

Whatever be the correct theory as to the impulse which causes the periodical ovarian congestion, and coincidentally the congestion of the other pelvic organs, the most superficial examination of the ovaries shows a relatively extraordinary system of arteries, which one could hardly conceive, by any possibility, to be necessary for the ordinary nutrition of the organs; and, hence, they could only be designed for repeated fluxions and engorgements. The great plexuses of veins contiguous to the ovaries, in the broad ligaments, testify also of the volume and activity of this portion of the circulation, and the possibilities for its derangement. Together with these facts must also be borne in mind the wonderful nerve supply of the ovaries by the renal, the ovarian, and the superior aortic plexuses. Therefore, given a highly congested and engorged ovary, and direct or indirect nerve communication with the most important structures and organs of the body, we can readily understand why so many women are in such a condition of unstable equilibrium with each recurring menstrual epoch, and why so many disturbances in parts remote from the ovaries are properly referred to them as the *fons et origo*.

The argument has been made that the function of

menstruation is one which has been engrafted upon women as a result of civilization (Stirton, *Glasgow Medical Journal*, January, 1887, p. 1). In so far as this implies that under favorable environment, which is a very comprehensive term, women menstruate with less inconvenience, and likewise give birth to more and healthier children than under less favorable environment—that is, in the savage or barbarous condition, it is probably true, just as in stock-raising and breeding the results are much more satisfactory, in every way, when the creatures are well fed and housed; but we must not forget that man is the end of the scale in evolution, and that the higher intellectual faculties seem to be developed at the expense of the lower animal ones. A fish has myriads of offspring, an elephant perhaps one. Your Shakespeares, and Washingtons, and Newtons, and Napoleons, and Goethes, and Carlyles have not been prolific. So of the George Eliots, the Madame de Staels, and the Elizabeth Brownings. That is to say, the greatest intellectual development in women is not favorable to fecundity, and probably is not favorable to ovulation, though the latter statement remains to be proved. The congestions in such women which preponderate are cerebral rather than pelvic; therefore, civilization in its most complete development may be unfavorable to menstruation. Certainly menstruation is not a flower of *modern* civilization, for in almost all nations and races which have left records of their habits and customs this function is referred to. The

Bible record of its existence among the ancient Hebrews is clear and explicit, and it is plain that it was not a rudimentary function then.

Instead of regarding menstruation as an engraftment upon civilization, it would seem more reasonable to consider it as the development and perfection of a function associated with the reproductive system which has been observed with greater or less distinctness in almost every variety of animals the habits of which have been subjected to careful study. The testimony in this direction is most abundant and most convincing. The females of certain insects exhibit decided changes of color during the breeding season. In reptiles and fishes the period in which the eggs are deposited is marked by a certain degree of excitement and by hyperæmia of the orifices of the generative canal. Laycock observed that tortoises exhale an order of musk, and lizards secrete an odorous, fatty liquid when the sexual appetite is aroused, and Darwin observed that during the breeding season the anal scent-glands of snakes and lizards were in activy secretion. (See Wiltshire on "Comparative Physiology of Menstruation," *Journ. Comp. Med. and Surg.*, iv. 28; v. 58, 163, 254.) Among birds the reproductive season is marked by brighter plumage in the female than at other times.

Ascending in the scale, we find not only that the sexual appetite is aroused with something like periodicity, but that it is accompanied with more or less discharge from the generative passages, in which

the sanguineous elements increase the higher we advance in the scale. With wild animals the sexual appetite is more intense when food and shelter are sufficient. In some of the domestic animals it recurs with a sanguineous or sanguino-mucous discharge with almost as great regularity as in women, and has been thus observed in mares, asses, ewes, sows, bitches, and cats. With animals having hollow uteri the external hemorrhage is less profuse than in those in which the uteri are thick and nearly solid; therefore, while the transudation into the uteri of bitches, sows, and cats may be abundant, the external hemorrhage may be quite insignificant.

In those primates in which the womb most resembles that organ in woman—that is, in the monkeys—the external hemorrhage is quite similar to that which occurs in woman. This fact has repeatedly been observed in monkeys kept in zoölogical gardens, and the bleeding has sometimes been so profuse as to excite marked concern on the part of their keepers. Buffon mentions eleven varieties of apes, baboons, and monkeys, in which menstruation has been observed. To mention, in addition, the names of Cuvier, Saint-Hilaire, Ehrenberg, and Raciborski as observers of facts similar to the foregoing, is sufficient to show that the subject has received critical attention from the most careful and eminent investigators.

Among wild mammalia the analogue of menstruation was observed by Bartlett, a keeper of the zoölogical gardens in London, in elephants, hippopotami,

zebras, jackals, and monkeys. Saint Cyr and Fleming, distinguished veterinarians, have published the results of their observations as to the existence of a sanguinolent oestral discharge in the domestic animals resembling the catamenia in women, and they maintain that though it may not be so invariable, so copious, or so well defined as in women, this fact is often due to its retention in the vagina and its passage outward with the urine. Modern obstetricians and clinicians, including Velpeau, Troussseau, Cazeaux, and Tarnier, have all observed the analogy between menstruation in women and a periodic flow in other mammalia, especially in monkeys and the domestic animals.

It would, therefore, seem warrantable to conclude with Wiltshire, from whose admirable lectures most of the foregoing facts have been obtained (*op. cit.*), that menstruation agrees with other functions of the animal economy in displaying subordination to the law of evolution. It may be indebted to civilization for certain fostering influences, but it does not originate in civilization, but in a law which applies to the reproductive system of vast series of types and forms of animal life.

If this review of the comparative physiology of menstruation has seemed tedious, it is hoped that it may not be valueless as an introduction to the consideration of the abnormalities of the function.

Normal menstruation, then, implies a flow of blood sufficient to relieve congestion—but not enough to cause weakness or exhaustion, unaccom-

panied with pain, by way of the genital passages. Conversely, abnormal menstruation implies an insufficient flow of blood, or an excessive flow—these terms being relative, for *insufficient* and *excessive* vary greatly with individual condition; or it may mean a flow that is accompanied with pain, or proceeds by other channels than the generative passages.

Disorders of menstruation may, therefore, be classified as follows:

1. Amenorrhœa, absence of the menstrual flow.
2. Dysmenorrhœa, the condition in which the menstrual flow is obstructed.
3. Oligomenorrhœa, scantiness or insufficiency of the menstrual flow.
4. Polymenorrhœa, excessive menstrual flow.
5. Atopomenorrhœa, menstruation or a menstrual flow which is out of place, or unnatural, or unwonted. This term corresponds with the expression vicarious menstruation, and its equivalents, ectopic menstruation (Barnes), ataxic menstruelle (Raciborski), *xénoménie* (Flamant).

The terms metrorrhagia and menorrhagia have been used to signify, respectively, excessive bleeding from the womb irrespective of menstruation, and excessive menstrual flow. I have introduced the term polymenorrhœa as a substitute for menorrhagia.

The classification which has heretofore been in use, is that which was adopted by Henry Bennett (see *Lancet*, 1852, i. 35, 65, 215, 328, 353) and

others, and seems to me to be deficient in definiteness.

Inasmuch as menstruation is influenced to so great a degree by such conditions as race peculiarities, nervous impulses, blood-pressure, heart force, and resisting power of vascular walls—internally, and atmospheric pressure, humidity, heat, cold, and wind currents (that is, by meteorological elements)—externally; we can readily understand why its equilibrium should be so unstable—indeed, there is probably no function that is so delicately poised, which accounts for the fact that we see so many illustrations of menstrual disorders and disturbances.

Certain general principles are usually admitted by those who have investigated this subject, and among them are the following :

1. Races or tribes that are least removed from animals most resemble animals in respect to this function. Thus Stirton (*Glasgow Med. Journ.*, 1887, p. 1) mentions an aboriginal and very degraded tribe in South Africa, of which the women menstruate only at irregular periods. When menstruation is first established the discharge is merely an abundant mucous secretion, and only after indiscriminate intercourse has taken place for some time, does blood appear with the menses, and then only in small quantities.

2. So-called nervous women, or women whose nerves are very readily stimulated or excited, seldom menstruate without discomfort. Such women frequently suffer from dysmenorrhœa, many from

oligomenorrhœa. A sudden emotion of joy, fear, or sorrow may check their flow; or it may be brought on prematurely or profusely by lascivious thoughts.

3. Influences located in the vascular system may, in themselves, be sufficient to determine great abnormalities in menstruation. A weak heart forces too little blood into the pelvic channels, the blood-pressure is slight, and the hemorrhage is correspondingly small. Or the heart works violently; as the time for menstruation recurs there is high blood-pressure with abundant power to overcome the resistance of the vascular walls, and the hemorrhage is profuse.

4. Great elevations, in which the atmospheric pressure is greatly reduced, must favor profuse menstruation as the pressure in the engorged pelvic vessels becomes greater than the external pressure. This remark applies more particularly to sudden removals to and short residence in such localities, for acclimation may be readily acquired if no serious disease involving the vascular system exists—in fact, in certain mountainous districts of France and Switzerland it has been observed that the native women are prone to suffer from irregular and scanty menstruation, notwithstanding the low atmospheric pressure.

5. A humid atmosphere is frequently a concomitant and probably a cause of amenorrhœa, or dysmenorrhœa, or oligomenorrhœa, on account of the difference between the pressure of the gases and

fluids within the body and the atmospheric pressure. These conditions are frequently observed in women who are about to menstruate at a time when the air is nearly saturated with moisture, also among those who sojourn by the seashore during the summer months, and in connection with ocean voyages. In New York City and probably in any great port of entry, one sees many immigrant women with whom amenorrhœa persists for months after their passage across the Atlantic. It is usually the young and unmarried who are thus affected, and the condition assumes great practical importance from the fact that one is obliged to determine as to the presence or absence of pregnancy.

6. In hot climates women menstruate earlier than in cold. It is not unusual for puberty to be attained between the ages of eight and twelve years in tropical countries, and the well-authenticated stories of precocious maternity which are not uncommon in India, and other countries of that latitude, show the great influence which heat exerts in developing and maturing animal as well as vegetable life. Rouvier, in an excellent statistical paper concerning menstruation among the heterogeneous population of Syria (see *Ann. de Gyn.*, 1887, xxvii. p. 178), states that among 742 cases of women of ten Oriental nationalities seen by him in a professional capacity in the city of Beyruth, the average age at the first menstruation was twelve years and ten months. The youngest menstruated for the first time at the age of nine and the oldest at nineteen. Among the Bedouins he found that menstruation

began at the age of eleven. Menstrual life, according to Wiltshire (*op. cit.*), is usually begun in the summer-time, and the same author thinks that the seasonal influence underlies the genesial influence in all creatures, and is a trace of a primordial condition governing reproduction. Heat is also an influence which tends to shorten the menstrual life. It is said that some of the Arab women cease menstruating between the ages of twenty and thirty (see *Real Encyclopedie*, article "Menstruation").

Cold—that is, extreme cold—is an agent which at all times and in all latitudes is unfavorable to the regular and easy performance of the menstrual function. As one travels toward cold climates the establishment of the function seems to be proportionally retarded. In northern European countries it is not at all uncommon for females to menstruate for the first time at the age of seventeen or eighteen, as the statistics of Leudet's table show. This was published in the *Transactions of the International Medical Congress* held at Paris in 1867 (p. 162), and the following are some of its important statements:

Average age for the establishment of menstruation from a large number of observations in :

		Years.	Months.
Swedish Laponia	.	.	18
Copenhagen	.	.	18 9
Norway	.	.	16 to 18
Göttingen	.	.	16
Stockholm	.	.	15 6
England	.	.	15 6
Bombay	.	.	13
Calcutta	.	.	12 $\frac{4}{10}$

Heinricius examined the histories of 3500 women of the working class in Finland, and found that in that cold country the average age for the first menstruation was fifteen years, nine months and twenty-five days (*Centr. f. Gyn.*, 1883, vii. 72).

It is thus an unquestionable fact which entirely controverts the opinion of Bennett (*op. cit.*) and others, that the influence of climate upon the menstrual function has not been exaggerated. Hennig is responsible for the statement (see *Centr. f. Gyn.*, 1887, No. 17, p. 274) that the Greenlanders and Laps menstruate only once in three months, and the Eskimos not at all in winter; also, that the women of Terra del Fuego do not menstruate at all or only infrequently during the winter. The effect of cold in suddenly checking the menstrual flow, illustrations of which are common enough among washerwomen and others who intentionally or unintentionally disregard the proper precautions against disturbance of the menstrual flow, is well known; and the subsequent pain and annoyance which frequently result, are equally familiar, and furnish an instructive commentary upon the fact that nature imperiously demands compliance with her laws, ignorance not being a valid excuse for their violation.

Returning again to the classification which was proposed, disorders of menstruation are to be considered as:

1. Amenorrhœa (δ not, $\mu\eta\nu\omega\delta$ monthly, $\beta\epsilon\iota\nu$ to flow).
2. Dysmenorrhœa ($\delta\bar{\nu}\varsigma$ bad or difficult, $\mu\eta\nu\omega\delta$ monthly, $\beta\epsilon\iota\nu$ to flow).

3. Oligomenorrhœa (*ολιγον* a little, slightly, *μήνος* monthly, *βεῖν* to flow).
4. Polymenorrhœa (*πολὺ* much, abundantly, *μῆνος* monthly, *βεῖν* to flow).
5. Atopomenorrhœa (*ἄτοπον* out of place, unwonted, *μῆνος* monthly, *βεῖν* to flow).

I. *Amenorrhœa* means absence or disappearance of the menstrual flow. This condition obtains with those who have passed the menopause, whether in the ordinary course of nature, or as a result of disease or traumatism. In some cases, no valid cause for its existence is discoverable. The term is not strictly applicable to those with whom the menstrual secretion is retained within the pelvic organs on account of obstruction of various kinds. It may be temporary or intermittent, as in the case of those who dwell in a very humid atmosphere, or in very cold climates, in connection with the pregnant state, in wasting diseases, etc.

The question has often been raised, whether amenorrhœa has any significance or influence upon the general health. In my opinion, its influence in this direction may be decided, but I am familiar with cases in which it has existed for periods of five to seven months, in which the cause could not be ascertained, the patients enjoying the best of health during these periods, and showing no substitute for menstruation by abnormal bleedings or other phenomena. Such patients usually consult the physician under the superstition that continued absence of the menstrual flow may be an indication of ap-

proaching pulmonary phthisis. One hundred and fifty years ago this question was elaborately discussed by Senfft, in a Latin treatise published at Leipzig. (An *foemina sine catameniorum fluxu perfecta frui possit sanitate, Lipsiæ, 1740.*)

Whether menstruation coincides invariably with ovulation is at present immaterial, though we know from the vast experience which has accumulated since the era of abdominal surgery began, that with the removal of the ovaries menstruation ceases in the majority of cases after a short period. It seems evident that the monthly flow is the medium by which the recurring congestion of the pelvic organs is relieved, whether directly associated with the discharge of an ovum or not. If the congestion does not recur, whatever be the cause, amenorrhœa is insignificant; if it does recur, it must follow the law which governs congestion in other parts, and unless relieved by the emission or dispersion of the blood, trouble must invariably result. Such trouble will be indicated by a sense of pain and fulness in the pelvic region; by pain in the loins from involvement of the renal plexus of nerves; and by pain in the head from communication with cerebral nerves and centres. That such communication exists, is demonstrable by the pain in the head, especially in the occipital region, which is frequently elicited by the pressure of the examining finger upon inflamed circumuterine tissues.

Amenorrhœa is not usually annoying to those who suffer from pulmonary phthisis and other wasting

diseases. Dalton has reported cases in which it existed in young women for many months before death as the accompaniment of disease of the liver, kidneys, or heart. It is usually troublesome in young women with whom menstruation is not fully established, and in those cases in which there is mechanical obstruction of any kind to the passage outward of the blood from the vessels. Not infrequently atropomenorrhœa results if mechanical obstacles to the normal outflow are present.

II. *Dysmenorrhœa*. This term, as it is commonly used, is the least exact of any of the terms in the proposed series. It is almost invariably associated in the mind of the physician with pain, and yet, there are doubtless many cases in which there is difficulty in relieving the engorged vessels during menstruation, true dysmenorrhœa, in which there is little, if any, pain. The term includes those cases in which, though there is a flow of blood, the blood is ejected or emitted with difficulty. In its broadest sense, dysmenorrhœa is the condition which is opposed to normal menstruation, and in that sense it includes all the disorders of menstruation. The causes of the difficulty may be mechanical or chemical—that is, the fault may either be in the blood or in its surroundings, and pain is not infrequently a symptom or announcement of the condition. The pain may be referred to the region of the uterus and be of a grinding, bearing-down character; it may be in the loins, in the back of the neck, in the head, etc. There may be a general feeling of discomfort

with soreness of the muscles and joints; there may be nausea and vomiting; and there may even be violent mental agitation. The influence of the nervous system in this condition is profound. Phlegmatic women seldom suffer from any of the foregoing symptoms during menstruation, unless there are serious mechanical obstructions to the outflow of the blood. On the other hand, sensitive and hysterical women are almost always dysmenorrhoeacs.

We hide our ignorance of the occult anatomical lesions which exist in these cases, by saying that the phenomena are the result of temperament. The truth probably is, that there is no complaint or disorder from which organized beings suffer, whether in great or small degree, which has not its correspondent molecular derangement somewhere, though it may be beyond the power of demonstration by mind and microscope. The mechanical causes of dysmenorrhœa are far more common than the chemical—in fact, it is difficult to conceive of dysmenorrhœa in which the mechanical element plays no part.

In the weak and flabby uteri of young women with poor nutrition and over-stimulated brains we find dysmenorrhœa associated with deficient arterial tension. There is insufficient force to expel the blood through the distended veins and capillaries, or the uterus with its weak and imperfectly nourished muscle contracts too feebly upon the exuded blood to force it out of the uterine cavity. Similar difficulties in the vascular apparatus obtain in the heavy

and boggy uteri of subinvolution. In anterior and posterior displacements the blood may be confined in the uterine cavity, and the force of contraction be spent at mechanical disadvantage in removing it. In certain forms of intra-uterine tumors similar accumulations and inefficient contractions may also exist and dysmenorrhœa with its attendant phenomena result. Obstruction may also be caused by hypertrophied mucous membrane constituting the so-called membranous dysmenorrhœa.

Again, dysmenorrhœa may arise in connection with various atmospheric conditions, such as have been enumerated in a preceding paragraph. The chemical condition of the blood may also be such as to prevent free transudation from the vessels during menstruation. Theoretically, an excess of the albuminous or fatty constituents with imperfect assimilation, a superabundance of corpuscles with corresponding deficiency of water and high specific gravity, may all act as sufficient causes of dysmenorrhœa. The same may be said of blood in which large quantities of sugar, pigment, parasites, and other foreign matters are circulating. In all such conditions, we should have a circulating fluid with increased specific gravity, and in so far as menstruation is dependent upon osmosis the fluid would transude with more than ordinary difficulty. I admit that this is entirely theoretical and know of no investigations which have been made upon the subject, but it seems to be in accordance with physical laws. Dysmenorrhœa, therefore, is not a single symptom but a

complex of symptoms. It is not a disease as that term is ordinarily understood, though it is a morbid condition.

III.—*Oligomenorrhœa.* The condition in which the monthly flow of blood is too scanty to relieve the pelvic congestion is very frequently associated with dysmenorrhœa, and in such cases presents more or fewer of the symptoms which are common to that condition. The term is relative, for the loss of a few drachms of blood in some individuals is all that seems necessary to restore the normal tension to the pelvic vessels. With such persons there may be no symptoms of dysmenorrhœa, and while they may enjoy a fair degree of health they are more frequently women with phthisis or anæmia, or some other constitutional vice.

Oligomenorrhœa sometimes persists during the pregnant state, recurring at that time in the month when the ordinary menstrual flow was wont to appear. It may occur in connection with deformities or want of development of the uterus or ovaries, or during the latter portion of menstrual life, and in such cases may be unaccompanied with dysmenorrhœa. Oligomenorrhœa with dysmenorrhœa is frequently present in cases which offer decided mechanical obstruction to the menstrual flow, as in cases of exaggerated anteflexion, and less frequently in cases of marked retroflexion. It is frequently present in women who are very fat, whether the latter condition be one which has persisted from childhood, or has occurred, as is frequently the case, as the consequence or result

of numerous pregnancies in rapid succession. In the oligomenorrhœa of anæmic women, the blood contains comparatively few corpuscles and is mostly serum. It serves as a fair index of the character of the blood which is circulating in the patient.

IV. *Polymenorrhœa*. This is also a term which must vary in its significance with the individual. I have seen women who bled profusely for days and weeks, some days losing at least a pint of blood, and yet preserving a ruddy complexion and a fair degree of strength. The losses of blood which are frequently sustained in connection with uterine cancer, polypi, and other neoplasms, before the evidences of the drain upon the resources appear upon the skin, or in the waning powers of endurance, are sometimes almost incredible. Polymenorrhœa is also a very common occurrence as the menopause approaches. At such times it is frequently associated with developing malignant disease, and in certain quarters, both lay and professional, the latter is looked upon as a necessary accompaniment of the menopause, hence it is termed "the critical time." It is critical simply in individual cases, not because it is nature's method to terminate the history of a function with a series of bloody inundations; it is no more critical than any other period of menstrual life, unless there is a foundation of disease which can be favored and encouraged by the changes in tissue vitality which characterize the approach of old age.

Again, every gynecologist sees plenty of weak and

anaemic women who give no history of losses of large quantities of blood, and yet the loss of a few ounces with each recurring period brings them to the verge of collapse. Such cases require active treatment quite as much as those in which the quantity lost is far greater. The blood-making powers of the latter are far more active than those of the former. It may generally be assumed that a menstrual period which continues longer than a week, has abnormal conditions associated with it, and should be stopped. This is especially true if the flow has been profuse, and though the patient may for a time see nothing in her condition to disturb her, with the exception of the annoyance which attends frequent and protracted bleedings, her vitality will eventually be sapped by the continuance of such a condition, and hence the sooner its cause is discovered and remedied, the better. Those who bleed for long periods of time, at regular menstrual intervals, will sooner or later be bleeding at irregular intervals unless relieved, and it is the part of wisdom and conservatism to investigate in all cases, as soon as possible, after the polymenorrhœa has been established.

One of the most common causes of this condition is carcinoma. For a long time the bleeding may not be due to sloughing and rupture of vessels connected immediately with the disease, but to the increased uterine congestion which attends its development. Other malignant diseases of the uterus produce excessive bleeding in the same manner as carcinoma—that is, by increasing to a very great

degree the volume of blood which is directed to the organ ; but they are far less common than carcinoma. Benign growths occupying the interior of the uterus, or imbedded in its muscular structure, are almost always a cause of polymenorrhœa, especially if near the trunk or main branches of the uterine artery, and it is perfectly intelligible that this should be the case.

Various diseases of the lining mucous membrane of the uterus, apart from the malignant diseases, are prolific sources of polymenorrhœa. Modern surgical gynecology has done much to relieve such conditions, which were once as fatal as cancer, and with the imperfect methods of examination formerly in vogue were probably diagnosed as cancer.

There are also certain occupations which seem to favor excessive bleeding at the menstrual period, and we may be unable to find any evidence of disease in the uterus or its surroundings in those who are thus suffering. Occupations in which the individual is constantly exposed to a very high temperature have this tendency, and I have seen a number of cases among cooks and laundresses. Among prostitutes and others who have greatly abused the sexual act, polymenorrhœa is also of frequent occurrence.

When we think of the great progress which has been made in recent years in the diagnosis of so many conditions which have excessive uterine hemorrhage as the chief symptom, and the means which

have been devised for their effectual relief, there is cause for profound gratitude.

V. *Atopomenorrhœa*. This term includes every variety of monthly flow, or substitute for the monthly flow by any other channel than the one which nature designed for that purpose. The term *ricarious* menstruation is a very awkward one, and properly means the menstruation which one person suffers or experiences for another. This is, of course, an absurdity, and only by twisting the term from its proper significance can it be understood as referring to menstruation which occurs through abnormal channels.

The term *xenomenia*, which was proposed by Flament, in 1720, is a good one, and is etymologically correct, but for the purpose of uniformity perhaps the more clumsy term which I have suggested would be preferable.

A common form of atopomenorrhœa is the bleeding from the nose which occurs with young girls during the first few months of puberty. It usually requires no treatment, and may be considered as a means of relief to a congestion which is displaced. Bleeding from the anus, especially in those who suffer from hemorrhoids, is another form of this condition, which is perfectly intelligible, and may usually be relieved by the destruction of the enlarged veins. Other abnormal bleedings which may occur with the normal menstrual flow or in the absence of it, are bleedings from the lungs or stomach; bleedings into or through the skin or mucous membrane in the form of purpura and various extravasa-

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tions and transudations ; bleeding in connection with acne, nævi, ulcers, and fistula ; bleedings from the gums, the nipple, the anterior chamber of the eye, the external auditory meatus, and other places.

The foregoing facts seem to prove that the monthly congestion in women, whatever be its cause, is not local, but general ; or, at any rate, that the vascular tension at such times is raised, so that veins and capillaries which are near the surface are much more liable to rupture than under the ordinary conditions of tension and pressure.

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